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2. Introduction and Specification

2-1. Introduction

High Performance Note PC

- High Performance with Intel Core 2 Duo / Celeron Processor and DDR III Memory
- Intel Turbo Memory (Option)
- Fingerprint recognition (Optional), TPM(Trusted Platform Module) (Optional)
- Wireless LAN (Optional), Bluetooth (Optional)



Convenient Function

- Camera Module Installed (Optional)



Prudent Design for easy use.

- Various shortcut keys on the keyboard
- Multi-card slot
- Luxurious design with increased usability



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2. Introduction and Specification

2-2. Specification

Processor and Motherboard	Description
Processor	Intel® Core™2 Duo Processor T9600 (2.8 GHz, 1066 MHz, 6 MB, 35 W) Intel® Core™2 Duo Processor T9400 (2.53 GHz, 1066 MHz, 6 MB, 35 W) Intel® Core™2 Duo Processor P9500 (2.53 GHz, 1066 MHz, 6 MB, 25 W) Intel® Core™2 Duo Processor P8600 (2.4 GHz, 1066 MHz, 3 MB, 25 W) Intel® Core™2 Duo Processor P8400 (2.26 GHz, 1066 MHz, 3 MB, 25 W) Intel® Core™2 Duo Processor P7350 (2.00 GHz, 1066 MHz, 3 MB, 25 W, Tj) Intel® Core™2 Duo Processor T5870 (2.00 GHz, 800 MHz, 2 MB, 35 W) Intel® Core™2 Duo Processor T5670 (1.8 GHz, 800 MHz, 2 MB, 35 W)
Chipset (MCH + ICH)	Intel PM45 + ICH9M, GM45 + ICH9M, PM45 + ICH9ME, GM45 + ICH9ME
Memory	
Memory capacity	Min. 1 GB ~ Max. 4 GB
Memory type	DDR3 (1066MHz)
Memory modules	1 GB SODIMM
Sockets	2-slot SODIMMs
Display	
LCD 1	15.4" WSXGA+ Non Glare
Vendor	Samsung LCD
Resolution	1,680 x 1050 pixel
Colors	262,144 colors
Viewing angle	Left 65° / Right 65° / Up 50° / Down 50°
Dot pitch	0.1972 x 0.1972mm (Horizontal x Vertical)
Contrast ratio	Typical 300 CR
Brightness	Typical 200 cd/m ²
Response time	Typical 16 ms / max.25 ms
Polarizer	Non Glare
Weight	Max. 590 g
LCD 2	15.4" WXGA Non Glare
Vendor	Samsung LCD
Resolution	1,280 x 800 pixel
Colors	262,144 colors
Viewing angle	Left 40° / Right 40° / Up 15° / Down 30°
Dot pitch	0.25875 x 0.25875 mm (Horizontal x Vertical)
Contrast ratio	Typical 500 CR
Brightness	Typical 200 cd/m ²
Response time	Typical 16 ms / max.25 ms
Polarizer	Non Glare
Weight	Max. 570 g
LCD 3	15.4" WXGA Non Glare
Vendor	Samsung LCD
Resolution	1,280 x 800 pixel
Colors	262,144 colors
Viewing angle	Left 40° / Right 40° / Up 10° / Down 30°
Dot pitch	0.25875 x 0.25875 mm (Horizontal x Vertical)
Contrast ratio	Typical 500 CR
Brightness	Typical 220 cd/m ²

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Processor and Motherboard	Description
Response time	Typical 8 ms / max.16 ms
Polarizer	Non glare
Weight	Max. 565 g
Graphics	
Interface	PCI Express 16x, DirectX 10 support
Graphic Controller	[Internal Graphic] Cantiga-GM [External Graphic] NB9P GE - GeForce 9600M GS (In case of intel PM45)
Video Memory	[Internal Graphic] Shared Memory 32MB ~ Max 256MB [External Graphic] GDDR3 256MB, GDDR3 512MB (In case of intel PM45)
Ext. Port	VGA (Dual Independent Display) HDMI (DVI Supported with HDMIto DVI Cable) HDCP (High Bandwidth Digital Content Protection)
Ext. CRT Resolution	Upto 1,920x1,440 : 32-bit true color EDID (Extended Display Identity Data, Accrding to support output ratio of monitor 4:3 and 16:10 etc.)
Audio	
Sound	
Codec	Intel® HD (High Definition) audio codec
Chipset	REALTEK ALC262-VC2-GR
Conversion	Built-in high performance 20 bit ADC & 24 bit DAC
Sound effect	EDS (Enhanced Digital Sound)
Internal interfaces	Embedded stereo speakers & integrated mono microphone
Speaker power rating	2 speakers x 1.5 W with enclosure
External interfaces	Headphone-out, microphone-in
Controls	Keyboard volume control
Microphone	
Type	1 integrated mono microphone
Sensitivity	-40±3 dB
Output impedance	Max. 2,200 Ohm
Noise supression	Noise supression
Storage	
Hard disk drive 1	
Vendor	HGST, Fujitsu, Samsung Storage, Toshiba , WD
Type	9.5 mm Height 2.5" S-ATA
Speed	5,400 rpm
Average seek time	Read max. 14 ms, write max. 15 ms
Supports	SATA II 3.0Gbit , Satal 1.5Gbit/s
Capacity	80 GB 120 GB 160 GB 200 GB 250 GB 320 GB

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Processor and Motherboard	Description
Hard disk drive 2	
Vendor	HGST, Fujitsu
Type	9.5 mm Height 2.5" S-ATA
Speed	7,200 rpm
Average seek time	Read max. 16 ms, write max. 17 ms
Supports	SATA II 3.0Gbit , SataI 1.5Gbit/s
Security	80 GB 120 GB 160 GB 200 GB
Type	NAND flash
Memory capacity	2 GB
Feature	ReadyDrive/ReadyBoost Support, AHCI Mode, Intel® Turbo Memory driver
Interface	Mini card (PCI-Express)
Optical disk drive	
DVD-rom 1	Factory Option
Vendor	TSST
Module type	Fixed 12.7mm Slim
Speed	8x DVD-ROM, 24x RW, 24x CD-R, 24x CD : TSST, TS-L333A
Average Access Time	DVD 130ms Typ, CD 130ms Typ
Weight	176g or less
S/W Supplied	Cyberlink DVD Solution
Security	RPC-II Regional Encoding
DVD-rom 2	Factory Option
Vendor	TEAC
Module type	Fixed 12.7mm Slim
Speed	8x DVD-ROM, 24x RW, 24x CD-R, 24x CD : TSST, DV-28S-V
Average Access Time	DVD 130ms Typ, CD 130ms Typ.,
Weight	176g or less
S/W supplied	Cyberlink DVD Solution
Security	RPC-II Regional Encoding
Software supplied	CyberLink DVD Suite
Security	RPC-II regional encoding
Super multi dual layer 1	
Vendor	TSST
Type	12.7 mm, S-ATA, Fixed type
Speed	5 x DVD-RAM, 8 x DVD±R, 6 x DVD±R DL, 8 x DVD+RW, 6 x DVD-RW, 24 x CD-R/RW, 8 x DVD, 24 x CD
Average access time	DVD 130 ms Typ., CD 130 ms Typ.
Weight	Max. 165 g
Software supplied	CyberLink DVD Suite
Security	RPC-II regional encoding
Super multi dual layer 2	
Vendor	TEAC
Type	Fixed 12.7mm

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Processor and Motherboard		Description
Speed	5 x DVD-RAM, 8 x DVD±R, 6 x DVD±R DL, 8 x DVD+RW, 6 x DVD-RW, 24 x CD-R/RW, 8 x DVD, 24 x CD	
Average access time	DVD 150 ms Typ., CD 140 ms Typ.	
Weight	Max. 180 g	
Software supplied	CyberLink DVD Suite	
Security	RPC-II regional encoding	
Super multi light scribe 1		
Vendor	TSST	
Type	12.7 mm, S-ATA, Fixed type	
Speed	5 x DVD-RAM, 8 x DVD±R, 6 x DVD±R DL, 8 x DVD+RW, 6 x DVD-RW, 24 x CD-R/RW, 8 x DVD, 24 x CD	
Average access time	DVD 130 ms Typ., CD 130 ms Typ.	
Weight	Max. 165 g	
Software supplied	CyberLink DVD Suite	
Security	RPC-II regional encoding	
Network communication		
Fax / Modem		
Type	56 Kbps / V.92 Modem (F.Option)	
Chipset	SV92A3	
Interface	RJ11 output	
LAN		
Type	10/100/1000 Ethernet	
Chipset	Boazman(82567V, 82567LM)	
Interface	RJ45 output	
Feature		
Wireless LAN 1		
Type	Intel® 802.11a/b/g/n	
Interface	Mini card type	
Chipset	Intel® WiFi Link 5300	
Antenna	3 integrated (Main, AUX, MIMO)	
Feature		
Wireless LAN 2		
Type	Intel® 802.11a/b/g/n (11a/b/g for Russia, Ukraine, Pakistan)	
Interface	Mini card type	
Chipset	Intel® WiFi Link 5100	
Antenna	2 integrated (Main, AUX)	
Feature		
Bluetooth		
Type	Bluetooth V2.0 + EDR (Enhanced Data Rate)	
Interface	USB daughter card type with integrated PIFA (Plane Inverted F Antenna)	
Chipset	Broadcom BCM2045	
Ports and interfaces (Input / output)		
PC card slot 1		
Type	PCMCIA	
Chipset	Ricoh R5C847	

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Processor and Motherboard		Description
Support		PCMCIA I, II type
Memory card slot		YES
Type		3-in-1 Multi-memory Card Slot
Support		SD / SDHC / MMC
Dock port		YES
Type		P-Dock port [P-Dock Option Product]
Model Code		AA-RD0NDOC
Feature		USB2.0 x 5, PS/2, DVI, VGA, RJ45, SIO, E-SATA, Display Port(option), Mic-in jack, Headphone jack
Input / output ports		
VGA		Yes (15 pin)
S-Video (TV-out)		No
HDMI		Yes
Headphone-out		Yes
Microphone-in		Yes
USB		4 x USB 2.0
SIO		Yes
IEEE1394		No
RJ11 (Modem)		Yes (F.Option)
RJ45 (LAN)		Yes
TV antenna		No
DC-In (power port)		Yes (5 pie)
Input devices		
Keyboard		Yes
- Amount of keys		88 (KOR, RUS, UKR, US) 89 (UK, FR, GM, SP)
- Feature		Travel length 2.6 mm, key pitch 19.05 mm
- Silver Nano Technology		Yes
- Fast function keys (EZ BLU)		F7 (Magic Doctor), F8 (SpeedUp Manager)
Touchpad		Synaptics touchpad (plat type with scroll area)
Button		Power On
LED indicator		Power, AC-in / battery, HDD, num-lock, caps-lock, scroll-lock, wireless antenna
Multimedia		
Integrated digital camera		
Type		1.3M Web-Cam
Chipset		GD-5931A/B (D-MAX)
Image sensor		Color CMOS SXGA (1.3 Mpixel)
SCAN mode		Progressive
Still image capture resolution		SXGA (1,280 x 1,024), VGA (640 x 480), CIF (352 x 288)
Video capture resolution		VGA (640 x 480)
Digital video capture speed		Max. 30 frame
Focus		Min. 50 cm ~ infinity
UVC support		USB video class 1.0 standard compliant
Power and power management		

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2. Introduction and Specification

Processor and Motherboard	Description
System power management	
Power management features	ACPI 1.0b support, standby (S3), hibernate (S4)
Standard battery	
Model code	BA43-00150A Sanyo (1'st) BA43-00149A SDI (2'nd)
Details of cell	6 cells
Battery capacity	5,200 mAh
Voltage	11.1 V
Battery rating	57.72 Wh
Color	Black
Dimension	204 x 48.05 x 21.4 mm (W x H x D)
Weight	Max. 350 g
Recharge time	Approx. 2 hours
Battery life (DVD play mode)	Typ. 2.6 hours
- Test program	PowerDVD(Max Battttery Mode)
- Test condition	Multimedia MOde, LCD Brightness-Level 4, WLAN R/F Off, discharged by 3% T9400(2.53GHz), DDR3 1GB, 15.4" WXGA(200nits), NB9P-GS(512MB), 80GB, DVD-Multi, Vista Home Premium
Battery life (Bench mark mode)	Max. 3.7 hours
- Test program	BatteryMark v.4.0.1
- Test condition	Samsung Optimized mode, LCD Brightness-Minimum, WLAN R/F Off, discharged by 3% T9400(2.53GHz), DDR3 1GB, 15.4" WXGA(200nits), NB9P-GS(512MB), 80GB, DVD-Multi, Vista Home Premium
Long-life battery	
Model code	AA-PL2NC9B
Details of cell	9 cells
Battery capacity	7,800 mAh
Voltage	11.1 V
Battery rating	86.58 Wh
Color	Black
Dimension	204 x 67 x 21.4 mm (W x H x D)
Weight	Max. 470 g
Recharge time	Approx. 3.2 hours
Battery life (DVD play mode)	Typ. 4.0 hours
- Test program	PowerDVD (Max Battttery Mode)
- Test condition	Mutimedia Mode, LCD Brightness-Level 4, WLAN R/F Off, discharged by 3% T9400(2.53GHz), DDR3 1GB, 15.4" WXGA(200nits), NB9P-GS(512MB), 80GB, DVD-Multi, Vista Home Premium
Battery life (Bench mark mode)	Max. 5.7 hours
- Test program	BatteryMark v.4.0.1
- Test condition	Samsung Optimized mode, LCD Brightness-Minimum, WLAN R/F Off, discharged by 3% T9400(2.53GHz), DDR3 1GB, 15.4" WXGA(200nits), NB9P-GS(512MB), 80GB, DVD-Multi, Vista Home Premium
AC adapter 1	
Model code	AD6016
Output power	60 W
Dimension	107.9 x 46.5 x 28 mm (W x H x D)

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2. Introduction and Specification

Processor and Motherboard	Description
Weight (AC Adapter)	Max. 295 g
Worldwide compatibility	Auto-sensing 100-240 VAC
Line frequency	50 Hz / 60 Hz
Adapter rating (input)	100 VAC ~ 240 VAC, 1.8 A
Adapter rating (output)	19.0 VDC, 3.16 A
AC Adapter 2	
Model Code	AA-PA1N90W
Output Power	90 W
Dimension	126 x 50 x 30 mm (W x H x D)
Weight (AC Adapter)	430g (Max.)
Worldwide Compatibility	Auto-sensing 100 - 240 VAC
Line Frequency	50 Hz / 60Hz
Adapter Rating - Input	100 VAC ~ 240 VAC, 1.5A
Adapter Rating - Output	19.0 VDC, 4.74 A
System dimensions	
Dimensions (W x D x H)	358.3 x 269.2 x30.8 (min) ~ 36.5 (max.) mm (14.1" x 10.6" x 1.21" (min) ~ 1.44" (max.) inch)
Weight	2.67Kg (5.89lbs) (With Weight saver : 2.53Kg (5.58lbs))
- Condition	(with battery)
Package dimensions (W x D x H)	425 x 110 x 405 mm
Package weight	4.34 Kg
- Condition	Status : supermulti , 6cell battery, 2.5" 80GB 2 platter HDD with Bundle items
Materials & Design	
- LCD Back	PC/ABS
- LCD Front	PC/ABS
- System Top	PC/ABS
- System Bottom	PC/ABS
Installed software	
Operating system	Genuine Windows Vista® Home Premium SP1
Software	Samsung Recovery Solution III (optional), Samsung Magic Doctor, Samsung Update Plus Easy Display Manager, Easy Battery Manager, Easy Network Manager, Easy SpeedUp Manager McAfee SecurityCenter, Adobe Acrobat Reader, Microsoft® Office Professional 2007 (free 60-day trial)

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2. Introduction and Specification

2-3. Comparing product specifications

	Lisbon (Standard Model)	P560 (Development model)
Feature		
CPU	667/800MHz Intel Core 2 Duo Processor (Merom)	800MHz/1066MHz Intel Core 2 Duo Processor (Penryn)
Chipset	GM965	Intel GM45 / PM45
Memory	DDR2 512MB ~ 4G	DDR3 1G ~ 4G
Graphic	Nvidia GF Go 8400 w/ 128MB Nvidia GF Go 8600 w/ 256MB	nVIDIA NB9P Series w/ 256MB & 512MB
LCD	15" SXGA+, Non-Glare	15.4" WXGA / WSXGA+, Glare / Non-Glare
HDD	SATA	SATA
ODD	PATA 12.7mm	SATA 12.7mm
Port	VGA, PCMCIA, 6-in-1	VGA, HDMI, PCMCIA, 3-in-1

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2. Introduction and Specification

2-4. Comparing product specifications jatasa

Model	Toshiba Tecra S5	HP Compaq 6710b	Sony VAIO FZ21Z	Dell Latitude D830	Lenovo ThinkPad T61
Feature					
CPU	Intel Core 2 Duo	Intel Core 2 Duo			
Memory	2 GB	1 GB	2 GB	2 GB	2 GB
HDD	160 GB SATA 5400rpm	120 GB SATA 5400rpm	300 GBSATA 4200rpm	120 GB SATA 5400rpm	160 GB SATA 5400rpm
ODD	DVD-Multi	DVD-Multi	BluRay-RE	DVD-Multi	DVD-Multi
Display	1680 x 1050 (WSXGA+)	1680 x 1050 (WSXGA+)	1280 x 800 (WXGA)	1920 x 1200(WUXGA)	1680 x 1050 (WSXGA+)
Graphic	NVIDIA Quadro NVS 130M (256MB)	Intel GMA X3100	NVIDIA GeForce 8600M GS (256MB)	nVidia Quadro NVS 140M	NVIDIA Quadro NVS 140M (128MB)
Network	802.11abgnBluetooth 2.0+EDR	802.11abgBluetooth 2.0+EDR	802.11abgnBluetooth 2.0	802.11abg Bluetooth 2.0+EDR	802.11abgn
Security	Fingerprint recognition	TPM, Fingerprint recognition	-	-	TPM, Fingerprint recognition
Battery	-	5.2 Cell	-	5 Cell	5.5 Cell

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2. Introduction and Specification

2-5. Option Material List

HDD		
		
BA59-02355A	HM320JI	5400RPM, 160G/P, 320G, SATA, 8M
BA59-02354A	HM251JI	5400RPM, 160G/P, 250G, SATA, 8M
BA59-02347A	MHZ2320BH-G2	5400RPM, 160G/P, 320G , SATA,8M
BA59-02346A	MHZ2250BH-G2	5400RPM, 160G/P, 250G, SATA,8M
BA59-02345A	MHZ2200BH-G2	5400RPM, 160G/P, 200G, SATA, 8M
BA59-02344A	MHZ2160BH-G2	5400RPM, 160G/P, 160G, SATA, 8M
BA59-02343A	MHZ2120BH-G2	5400RPM, 160G/P, 120G, SATA, 8M
BA59-02286A	MK1246GSX	5400RPM, 125G/P, 120G, SATA, 8M
BA59-02226A	WD1200BEVS-22UST0	5400RPM, 125G/P, 120G ,SATA,8M
BA59-02202A	HTS542512K9A300	5400RPM, 125G/P, 120G, SATA,8M
BA59-02189A	HM121HI	5400RPM, 160G/P, 120G, SATA, 8M
BA59-02208A	MHY2120BH	5400RPM, 125G/P, 120G, SATA, 8M
BA59-02287A	MK1646GSX	5400RPM, 125G/P, 160G, SATA, 8M
BA59-02279A	WDC-WD1600BEVT-22ZCT0	5400RPM, 160G/P, 160G, SATA, 8M
BA59-02227A	WD1600BEVS-22RST0	5400RPM, 80G/P, 160G, SATA, 8M
BA59-02187A	HM160HI	5400RPM, 160G/P, 160G, SATA, 8M
BA59-02203A	HTS542516K9A300	5400RPM, 125G/P, 160G, SATA, 8M
BA59-02209A	MHY2160BH	5400RPM, 125G/P, 160G, SATA, 8M
BA59-02290A	MK2046GSX	5400RPM ,125G/P, 200G , SATA,8M
BA59-02210A	MHY2200BH	5400RPM, 125G/P, 200G, SATA, 8M
BA59-02210A	MHY2200BH	5400RPM, 125G/P, 200G, SATA, 8M
BA59-02204A	HTS542520K9A300	5400RPM, 125G/P, 200G, SATA, 8M
BA59-02204A	HTS542520K9A300	5400RPM, 125G/P, 200G, SATA, 8M
BA59-02288A	MK2546GSX	5400RPM, 125G/P, 250G, SATA, 8M
BA59-02228A	WD2500BEVS-22UST0	5400RPM, 125G/P, 250G, SATA, 8M
BA59-02211A	MHY2250BH	5400RPM, 125G/P, 250G, SATA, 8M
BA59-02205A	HTS542525K9A300	5400RPM, 125G/P, 250G, SATA, 8M
BA59-02190A	HM250JI	5400RPM, 160G/P, 250G, SATA, 8M
BA59-02280A	WDC-WD3200BEVT-22ZCT0	5400RPM, 160G/P, 320G, SATA, 8M

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2. Introduction and Specification

LCD		
		
BA59-02170A	LTN154P4-L02-0	15.4" WSXGA+(High Bright, 200nit Gloss)
BA59-02276A	LTN154P3-L04-0	15.4" WSXGA+(High Bright, 200nit Gloss)
BA59-02275A	LTN154AT07-8	15.4" WXGA(High Bright, 200nit Gloss)
BA59-02350A	LTN154AT10-8	15.4" WXGA(High Bright, 220nit Gloss)
MEMORY		
		
1105-001923	M471B2874DZ1-CF8	1GB (DDR3 1066MHz/1G*1)
1105-001921	M471B5673DZ1-CF8	2GB (DDR3 1066MHz/2G*1)
CPU		
		
0902-002337	T2_P8600	2.4 GHz, 1066 MHz, 3 MB, 25 W
0902-002336	T2_T9400	2.53 GHz, 1066 MHz, 6 MB, 35 W
0902-002342	T2_T9600	2.8 GHz, 1066 MHz, 6 MB, 35 W
0902-002341	T2_P8400	2.26 GHz, 1066 MHz, 3 MB, 25 W
0902-002340	T2_P9500	2.53 GHz, 1066 MHz, 6 MB, 25 W
0902-002331	T2_T5870	2.0 GHz, 800 MHz, 2 MB, 35 W
0902-002330	T2_T5670	1.8 GHz, 800 MHz, 2 MB, 35 W
0902-002356	T2_P7350	2.0 GHz, 90 MHz, 3 MB, 25 W

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2. Introduction and Specification

ODD		
		
BA96-03666A	TEAC	DVD-ROM
BA96-03667A	TSST	DVD-ROM
BA96-03665A	TSST	Super Mul
BA96-03670A	TEAC	Super Mul
BA96-03671A	TSST	Super Mul
WLAN		
		
BA59-02273A		Intel Shirley Peak 3x3 AGN
BA59-02297A		Intel Shirley Peak 1x2 AGN
BLUE TOOTH		
		
BA59-01691A	T60H928.01	Bluetooth V2.0, FOXCONN
BA59-01916A	BTO2P0B2SA	Bluetooth V2.0, SEM

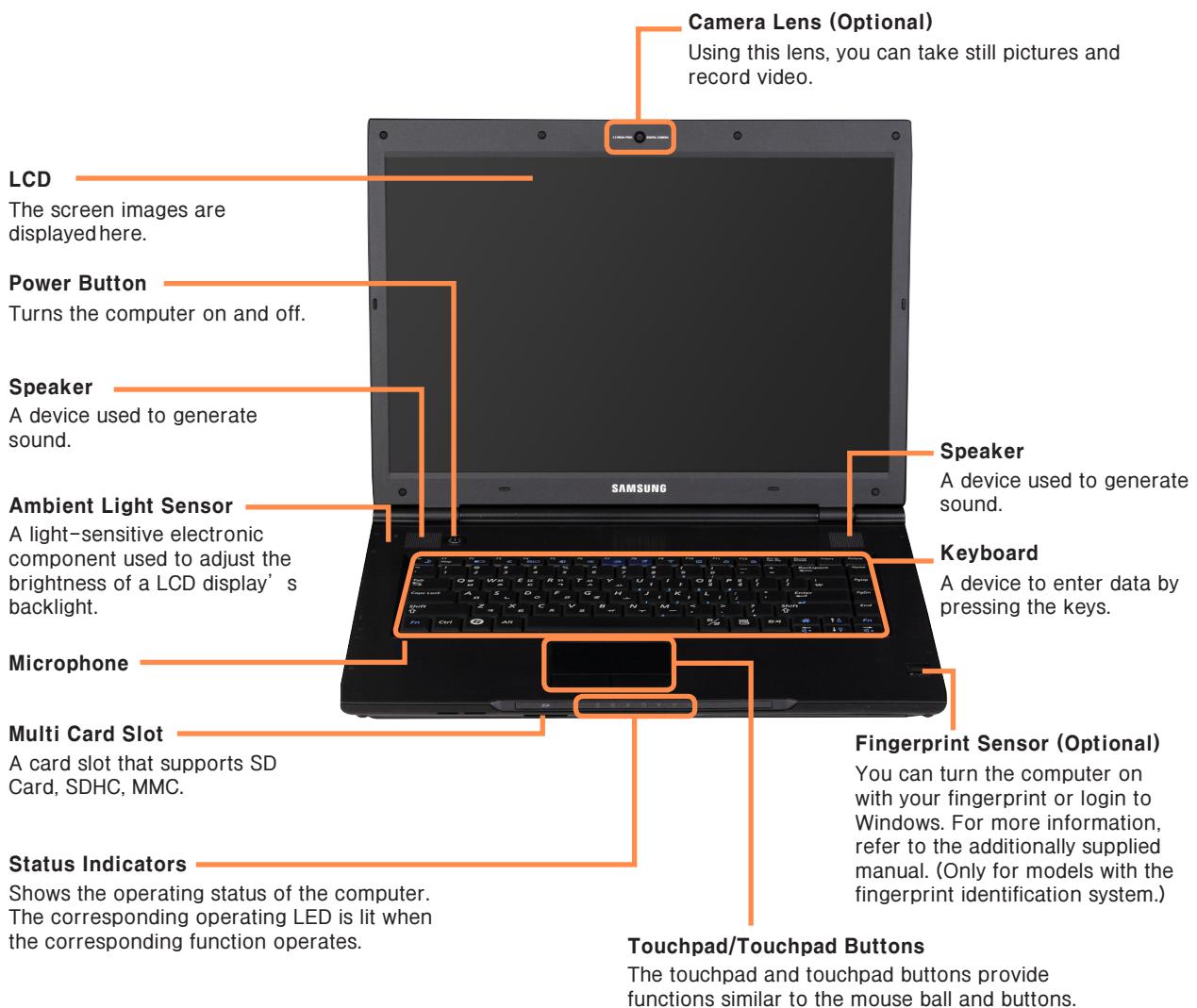
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2. Introduction and Specification

2-6. Function of Product

2-6-1. Overview

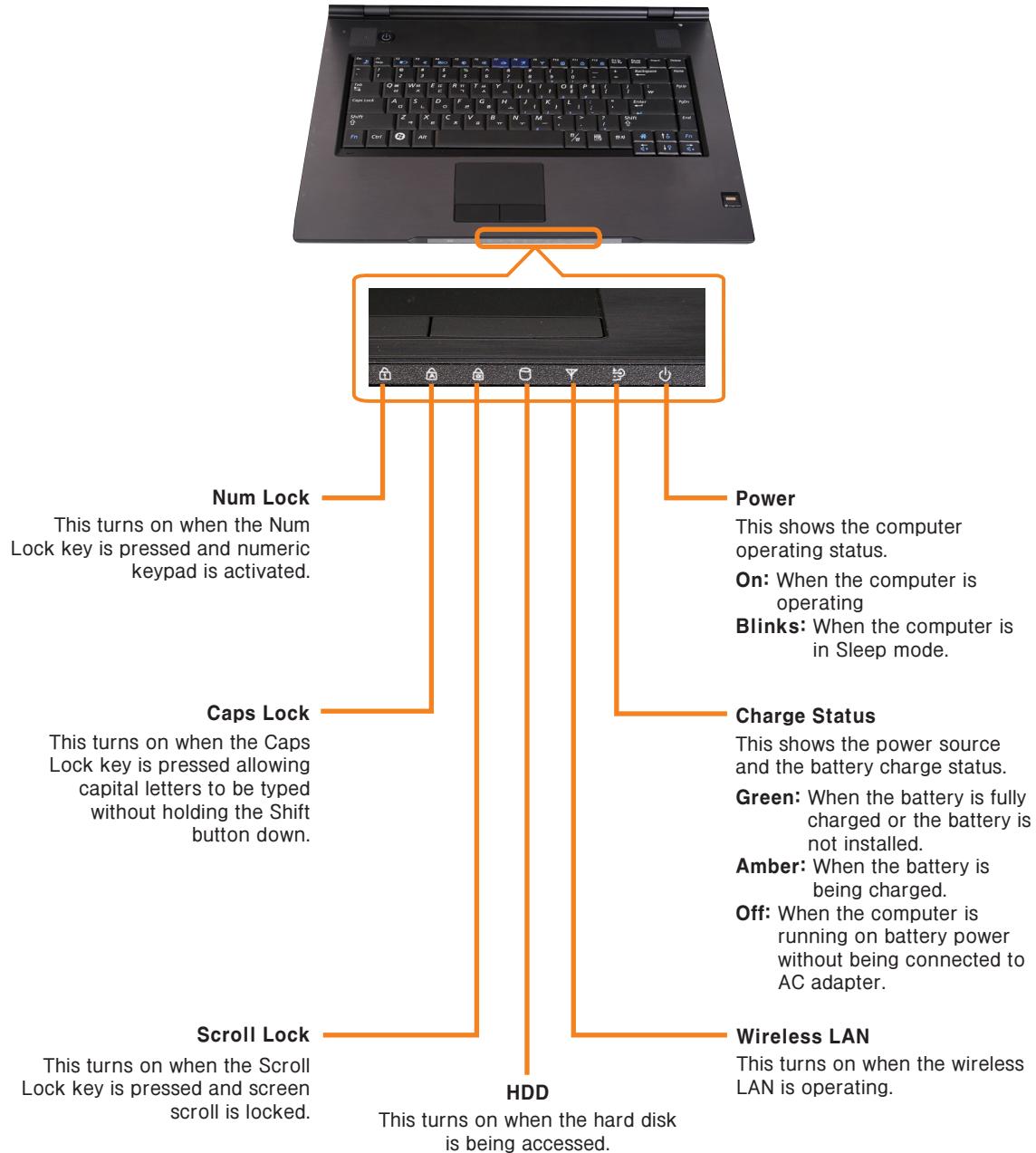
Front View



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2. Introduction and Specification

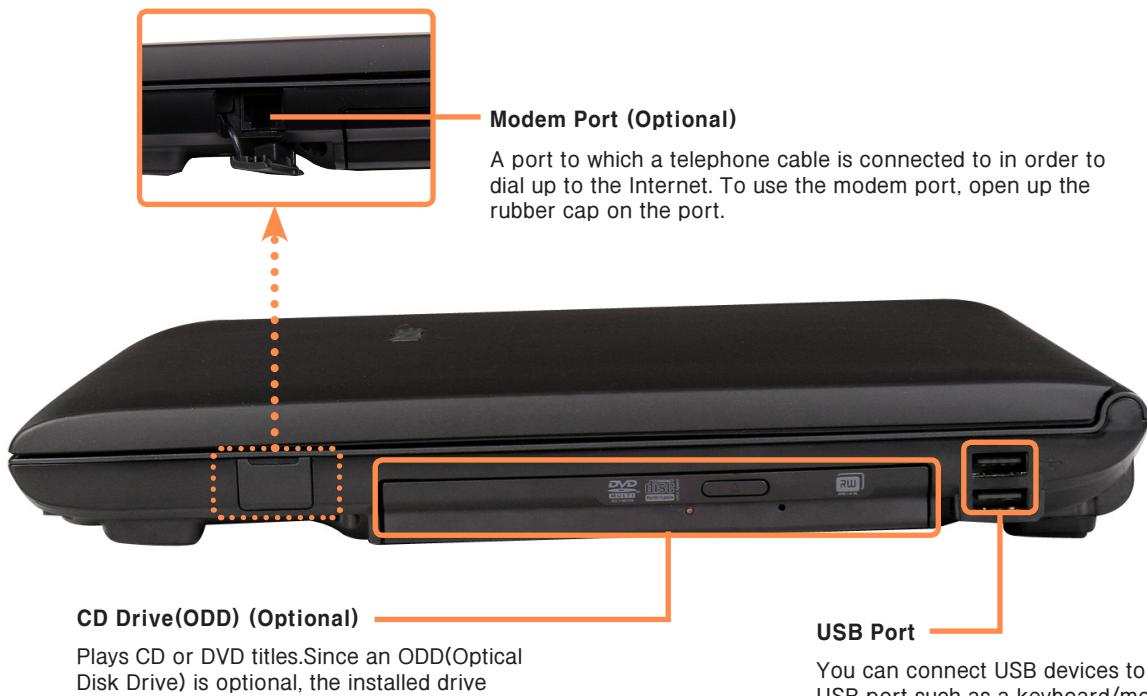
Status Indicators



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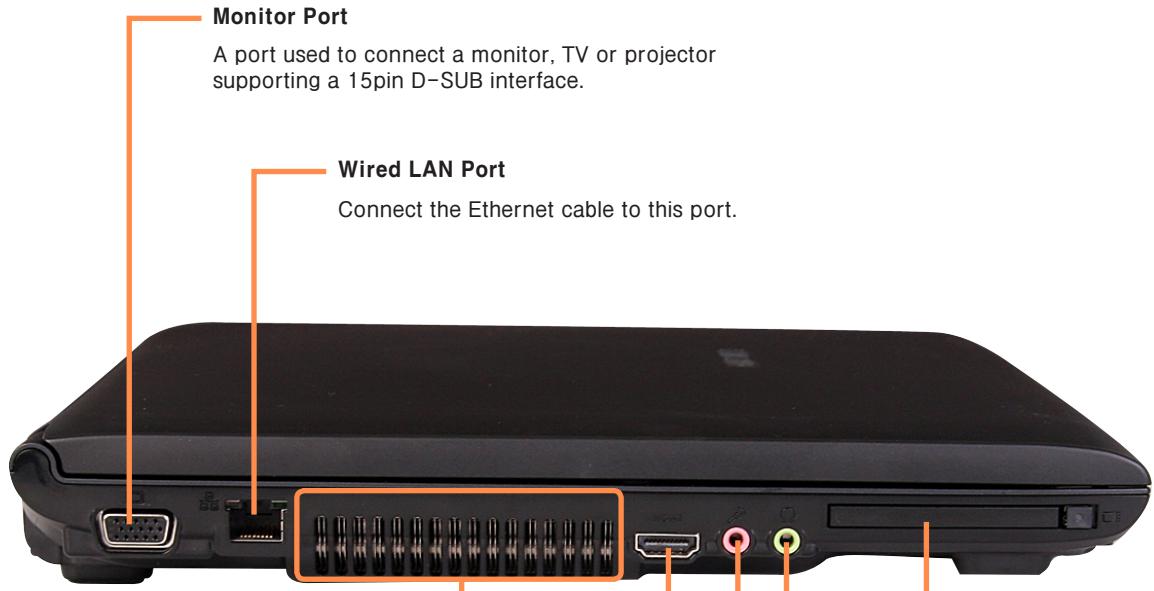
Right View



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2. Introduction and Specification

Left View



Monitor Port

A port used to connect a monitor, TV or projector supporting a 15pin D-SUB interface.

Wired LAN Port

Connect the Ethernet cable to this port.

Fan Vents

The internal heat of the computer is emitted through these holes.

Caution If the vents are blocked the computer may overheat. Avoid blocking the vents as this may be dangerous.

Digital Video/Audio Port (HDMI)

You can connect an HDMI cable to this port. Using this port, you can enjoy digital video and audio on the TV.

PC Card Slot

Install the PC card into this slot.

Headphone Jack

A jack used to connect the headphones.

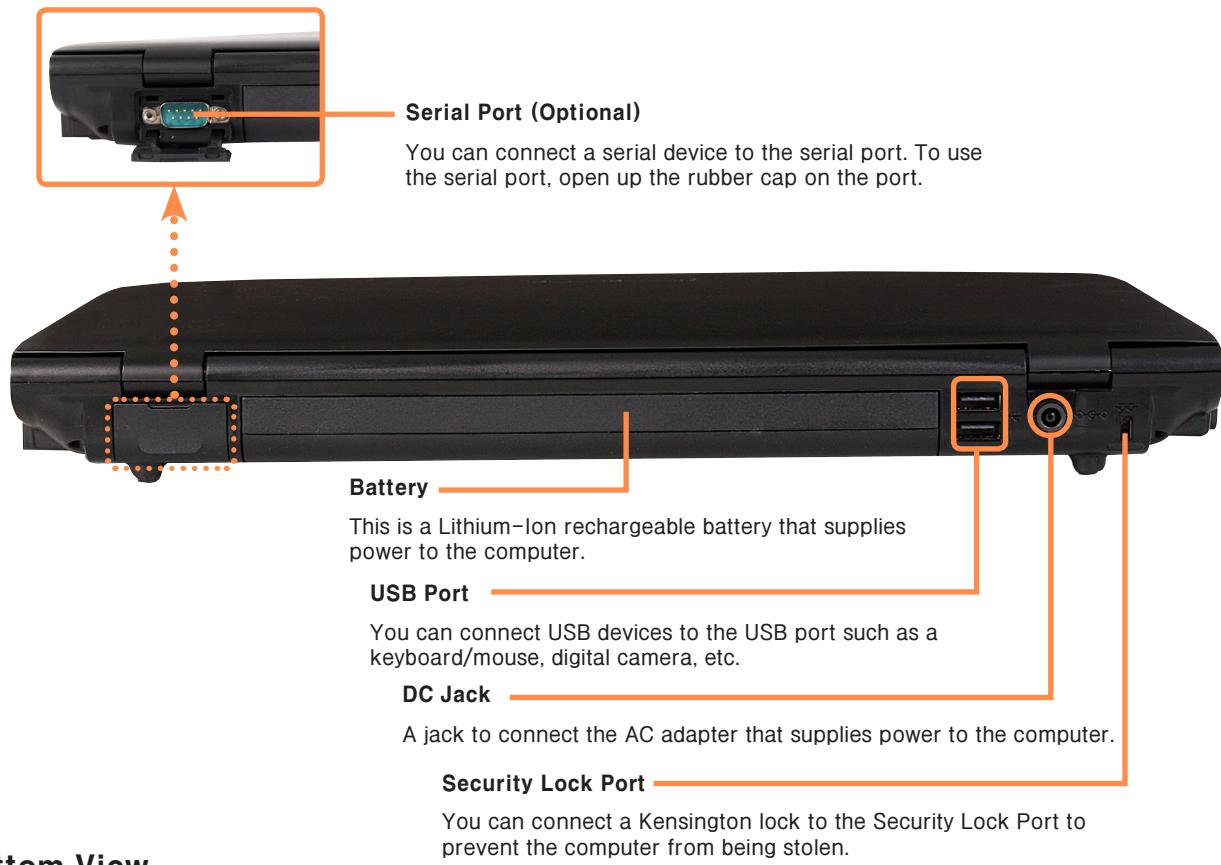
Microphone Jack

A jack used to connect the microphone.

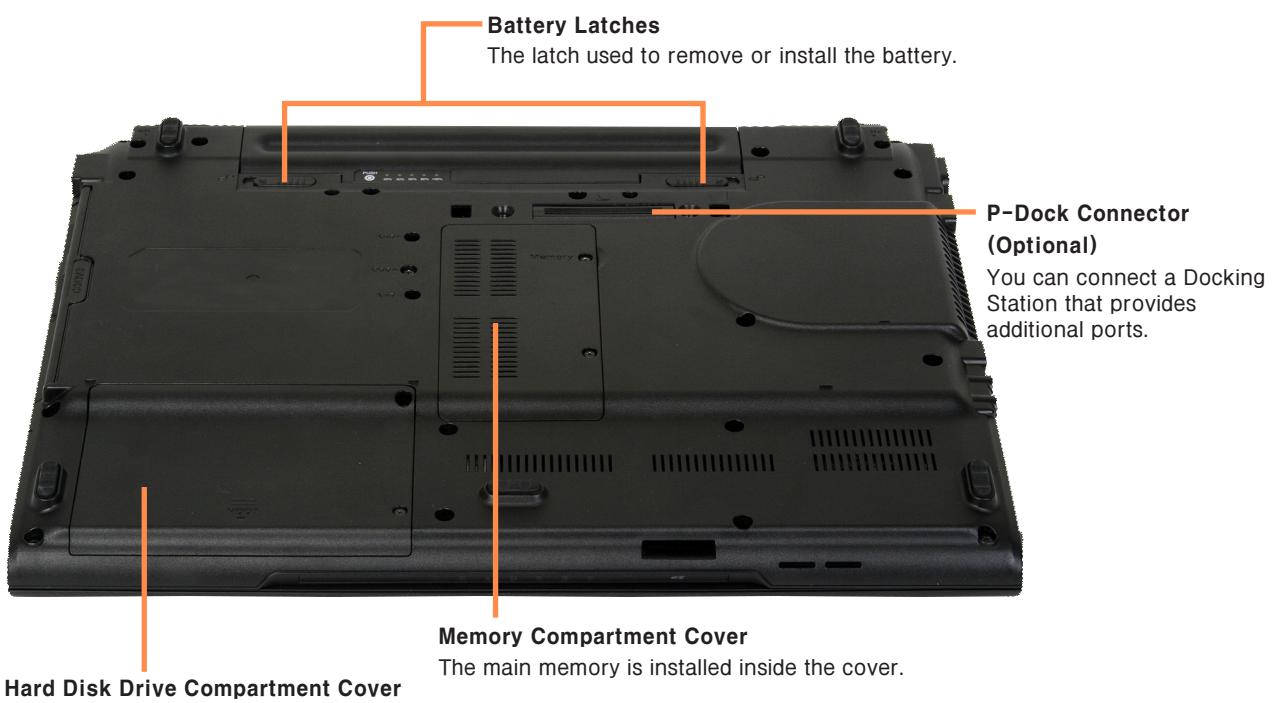
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Back View



Bottom View



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2. Introduction and Specification

2-6-2. New Added Function

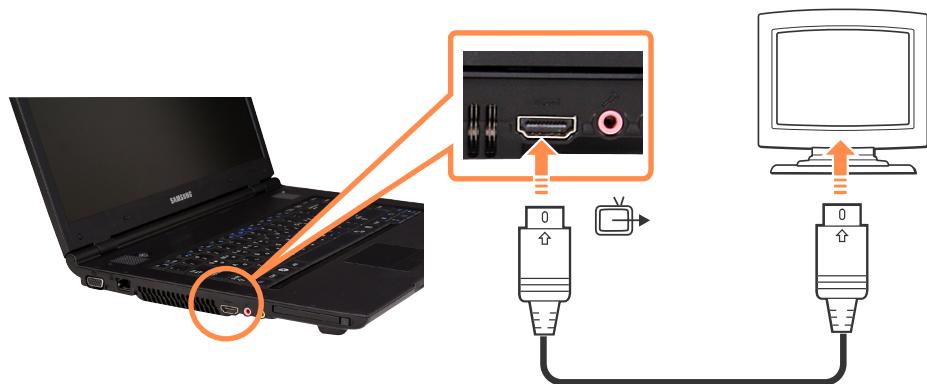
Camera (Option)

Easy use of taking a picture and moving image.



HDMI Port

Convenient connection with MONITOR through HDMI port.



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2. Introduction and Specification

HD-DVD, Blue-Ray

The existing DVD HD-DVD can store more data in the next-generation storage devices, much sharper than the existing HD DVD movies, SD-class save, and you can enjoy.

Type	HD DVD	DVD	CD
Logo			
Storage Capacity	15GB / 30GB	4.7GB / 8.5GB	0.65GB
Data Rate	36.55 Mbps	11.08 Mbps	7.8 Mbps
Supported Resolution	1920 x 1080(i)	720 x 480	320 x 240

Date Rate : The amount of data that can be read or written onto a storage media per second.

Supported Disk Types

HD DVD supports the following disk types.

Type	Function
HD DVD-ROM	Reads HD DVD disks.
HD DVD-R	Reads HD DVD disks and writes data onto HD DVD disks once.
HD DVD-RW	Reads and writes to rewritable HD DVD media.

Blu-Ray is a next generation storage media that can save approximately 5 to 10 times more data than the existing DVD format. You can record and play better quality HD movies than the existing SD-grade DVD format.

Type	Blu-Ray	DVD	CD
Logo			
Storage Capacity	25GB / 50GB	4.7GB / 8.5GB	0.65GB
Data Rate	36 Mbps	11.08 Mbps	7.8 Mbps
Supported Resolution	1920 x 1080(i)	720 x 480	320 x 240

Date Rate : The amount of data that can be read or written onto a storage media per second.

Supported Disk Types

Blu-Ray supports the following disk types.

Type	Function
BD-ROM	Reads Blu-Ray disks.
BD-R	Reads Blu-Ray disks and writes data onto Blu-Ray disks once.
BD-RE	Reads and writes to rewritable Blu-Ray media.

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2. Introduction and Specification

New Keyboard



Shortcut Keys

You can use the following functions by pressing the keys below with the Fn key.



Fn+	Name	Function
	REST(Sleep Mode)	Switches to Sleep mode. To wake the computer up, press the Power button.
	Gauge	Shows the remaining battery charge. You can only use this function when the Easy Display Manager program is installed.
	Euro	Enters the Euro monetary unit symbol. This key may not be provided depending on the keyboard type.
	CRT/LCD	Switches the screen output to the LCD or external monitor when an external monitor (or TV) is connected to the computer.
	Backlit	Turns the LCD backlight on or off.
	Mute	Mutes or cancels mute.
	Samsung Magic Doctor	System diagnosis, recovery and Internet consultation program, Samsung Magic Doctor, will be launched.
	Easy SpeedUP Manager	You can select operation mode when you need maximum system performance or low-noise/low power consumption with one-click. Slient : Low-noise and low power consumption mode Normal : Normal Mode Speed : Maximum performance mode. The system operates in its maximum performance, and system resources are allocated to the currently active program with priority for maximum performance.
	Wireless LAN	Turns the wireless LAN function on or off in models with wireless LAN capability.
	Touchpad	Turns the Touchpad function on or off. When using an external mouse only, you can turn the Touchpad off.

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2. Introduction and Specification

	Num Lock	Turns the numeric keyboard on or off.
	Scroll Lock	If you turn the Scroll Lock on, you can scroll the screen up or down without changing the cursor location in some applications.

Screen Brightness Control

To adjust the LCD brightness press the **Fn** +  key combination or the **Fn** +  key combination. The changed screen brightness is displayed at the center of the screen for a moment.

Volume Control

To control the volume, press the **Fn** +  key combination or the **Fn** +  key combination. You can mute the sound or cancel the mute function by clicking the **Fn** +  key combination.

Numeric Key

The numbers are printed in blue on the numeric keys. If Num Lock is turned on by pressing the **Fn** +  key combination, you can use the numeric keys to enter digits.

Other Function Keys

Application Key

Performs the right-click mouse function (touchpad).

Internet Explorer Quick Launch Key : (Fn+)

Launches Internet Explorer.

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2. Introduction and Specification

2-7. SW List

Item		Specification	Ver	Comment
OS	Vista	Vista Home Premium 32Bit SP1		New
Driver	Chipset	Montevina PM45 + ICH9M	8.7.0.1007	New
	Graphic Driver	Intel GM45 (Internal)	7.15.10.1481	New
		Nvidia GeForce 9600M GS(External)		
	Wireless LAN Driver (Intel)	3965ABG	12.0.0.78	New
	Sound Driver	ALC262-GR	6.0.1.5605	
	Bluetooth Driver	Bluetooth Driver	6.0.1.6300	
	Touchpad Driver	Touchpad Driver	10.1.2.0	
	Modem Driver	Delphi V92	2.1.88	
	LAN Driver	Boazman	9.51.4.0	
	Camera Driver	Demax Camera Driver	6.11.706.13	New
	Intel Turbo Memory Driver	Intel Turbo Memory Driver	1.6.1.1004	New
Application		Adobe Reader	8.1.0.137	
		Easy Battery Manager	3.2.1.7	New
		Easy Display Manager	2.2.6.0	New
		Easy Network Manager	4.0.0.12	
		Easy Partition Manager	2.2.2.2	
		Easy Speed Up Manager	2.0.1.0	
		Intel Turbo Memory Console	1.6.1.1004	
		McAfee VirusScan	8.0.226.0	
		Ms Office 2007 Ready	1.2	
		Play Camera	2.0.0.12	New
		Recovery Solution III	3.0.0.5	
		Samsung Magic Doctor5	5.0.3.3	
		Samsung Update Plus	1.3.0.12	
		Samsung Screen Saver	1.0.2.0	
		Samsung Wall Paper	2.0.0.0	

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2. Introduction and Specification

2-8. System Setup (BIOS Setup)

MAIN

SATA Port 1

- HDD model name is displayed in this item for SATA Port 1.

SATA Port 2

- HDD model name is displayed in this item for SATA Port 2.

Total Memory

- Total memory size of the system.

Slot 1 Memory

- Memory size of the slot 1.

Slot 2 Memory

- Memory size of the slot 2.

Phoenix SecureCore(tm) Setup Utility					
Main	Advanced	Security	TPM State	Boot	Exit
System Time [18:06:14] System Date [06/04/2008] ▶ SATA Port 1 [FUJITSU MHY2160BH-(PM)] ▶ SATA Port 2 [TSSTcorp CDWDVD TS-L463A-] CPU Type Intel(R) Core (TM) 2 Duo CPU CPU Speed 2.53 GHz Total Memory 1024 MB Slot1 Memory 1024 MB Slot2 Memory Not Installed Graphics Memory [Auto : Shared] BIOS Version 00LU.TEST.20080520.hkk Micom Version 00LUPU00					Item Specific Help <Tab>, <Shift-Tab>, or <Enter> selects field.
F1 Help ↑ Select Item F5/F6 Change Values F9 Setup Defaults	ESC Exit ← Select Menu Enter Select ► Sub-Menu F10 Save and Exit				

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2. Introduction and Specification

Advanced

Intel(R) SpeedStep(TM)

- This selects whether Intel® SpeedStep™ Technology is enabled or not.

Legacy USB Support

- Enable support for Legacy Universal Serial Bus.

Large Disk Access Mode

- UNIX, Novell NetWare or other O/S, select 'Other'.

AHCI Mode Control

- Select a AHCI mode always enabled or disabled.

EDB (Execute Disable Bit)

- supports the Data Execution Prevention (DEP) feature. DEP is a set of H/W & S/W technologies that perform additional checks on memory to help prevent malicious code from running on a system.

Internal LAN

- "Enabled" will allow the internal LAN to operate correctly.

Touch Pad Mouse

- 'Disabled' prevents installed Touch Pad mouse from functioning, but frees up IRQ 12. 'Enabled' forces the Touch Pad mouse to be enabled.

CPU Power Saving Mode

- 'Enabled' will decrease system power consumption.

USB S3 Wake-up

- Select Enabled to support that system can be waked up from ACPI S3 state by USB activities.

Purchased Date

- Purchased date is displayed after 10 times boot.

Phoenix SecureCore(tm) Setup Utility					
Main	Advanced	Security	TPM State	Boot	Exit
Intel (R) SpeedStep (TM)	[Enabled]				Item Specific Help
Legacy OS Boot	[Enabled]				This selects whether Intel (R) SpeedStep (TM) Technology is enabled or not.
Legacy USB Support	[Enabled]				'Disabled' means that system does not support Intel (R) SpeedStep (TM) Technology.
Large Disk Access Mode	[DOS]				'Enabled' is recommended.
AHCI Mode Control	[Enabled]				
EDB (Execute Disable Bit)	[Disabled]				
Internal LAN	[Enabled]				
Touch Pad Mouse	[Enabled]				
CPU Power Saving Mode	[Enabled]				
USB S3 Wake-up	[Disabled]				
► I/O Device Configuration					
F1 Help	↑↓ Select Item	F5/F6 Change Values			F9 Setup Defaults
ESC Exit	↔ Select Menu	Enter Select ► Sub-Menu			F10 Save and Exit

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2. Introduction and Specification

Security

set Supervisor Password

- Supervisor Password controls access to the setup utility.

set User Password

- User Password controls access to a few items in the setup utility.

set HDD Password

- User can set a password of a HDD.

Password on Boot

- Supervisor Password controls access to system boot.

Fixed Disk Boot Sector

- "Write Protect" will protect to write in Boot Sector of HDD.

Phoenix SecureCore(tm) Setup Utility					
Main	Advanced	Security	TPM State	Boot	Exit
					Item Specific Help
					Supervisor Password controls access to the setup utility
Supervisor Password		Clear			
User Password		Clear			
HDD Password		Clear			
Set Supervisor Password		[Enter]			
Set User Password		[Enter]			
Set HDD Password		[Enter]			
Password on boot		[Enabled]			
Fixed disk boot sector		[Normal]			
TPM Support		[Enabled]			
F1 Help ↑ Select Item			F5/F6 Change Values		
ESC Exit ←→ Select Menu			Enter Select ► Sub-Menu		
				F9 Setup Defaults	
				F10 Save and Exit	

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TPM State

Security Chip State

- Display the current status of TPM chip.

Change TPM State

- Set the status of TPM chip.

Phoenix SecureCore(tm) Setup Utility					
Main	Advanced	Security	TPM State	Boot	Exit
Security Chip State		Disabled and Deactivated [No Change]			
Change TPM State		Item Specific Help Change TPM State A disabled security chip prevents encrypted data from being used A deactivated security chip prevents a user from taking ownership			
F1	Help	↑ ↓	Select Item	F5/F6	Change Values
ESC	Exit	↔	Select Menu	Enter	Select ► Sub-Menu
				F9	Setup Defaults
				F10	Save and Exit

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2. Introduction and Specification

Boot

Boot Device Priority

- Select system boot options.

NumLock

- Selects Power-on state for Numlock.

Enable Keypad

- Select a method of Keypad.
 - [Only By Fn Key] : Leave the embedded keypad disabled when the Numlock LED is on.
 - [By NumLock] : Enable the embedded keypad when Numlock LED is on and no external keyboard is attached.

Summary Screen

- Display system configuration on boot.

Boot-time Diagnostic Screen

- Display the diagnostic screen during boot.

PXE Oeprom

- This selects whether network boot PXE will be loaded or not during the POST.
 - [Only with F12] : The network boot PXE will be loaded only if F12 is pressed during the POST.
 - [Always] : The network boot PXE will be always loaded during the POST.

Brightness Control Mode

- [Auto] : The brightness values are set by the status of AC adapter at each bootup.
- [User Control] : The brightness values could be remained regardless of the status of AC adapter.

Wireless Device Control

- [Always On / Off] : The wireless devices are turned on or not.
- [Last Status] : The wireless devices are restored to last status.

Smart Battery Calibration

- If you select this option, the system battery will be discharged completely for more accurate battery level detection.
This option only works with SMART battery.

Phoenix SecureCore(tm) Setup Utility																																																				
Main	Advanced	Security	TPM State	Boot	Exit																																															
<p>▶ Boot Device Priority</p> <table> <tbody> <tr> <td>NumLock</td> <td>[OFF]</td> <td colspan="4" style="text-align: right;">Item Specific Help</td></tr> <tr> <td>Enable Keypad</td> <td>[By NumLock]</td> <td colspan="4" style="text-align: right;">Select system boot options</td></tr> <tr> <td>Summary screen</td> <td>[Disabled]</td> <td colspan="4"></td></tr> <tr> <td>Boot-time Diagnostic Screen</td> <td>[Disabled]</td> <td colspan="4"></td></tr> <tr> <td>PXE OPROM</td> <td>[Always]</td> <td colspan="4"></td></tr> <tr> <td>Brightness Mode Control</td> <td>[Auto]</td> <td colspan="4"></td></tr> <tr> <td>Wireless Device Control</td> <td>[Always On]</td> <td colspan="4"></td></tr> <tr> <td colspan="4">Smart Battery Calibration</td><td colspan="2"></td></tr> </tbody> </table>					NumLock	[OFF]	Item Specific Help				Enable Keypad	[By NumLock]	Select system boot options				Summary screen	[Disabled]					Boot-time Diagnostic Screen	[Disabled]					PXE OPROM	[Always]					Brightness Mode Control	[Auto]					Wireless Device Control	[Always On]					Smart Battery Calibration					
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Exit

Exit Saving changes

- Exit System Setup and save your changes to CMOS.

Exit Discarding Changes

- Exit utility without saving Setup data to CMOS.

Load Setup Defaults

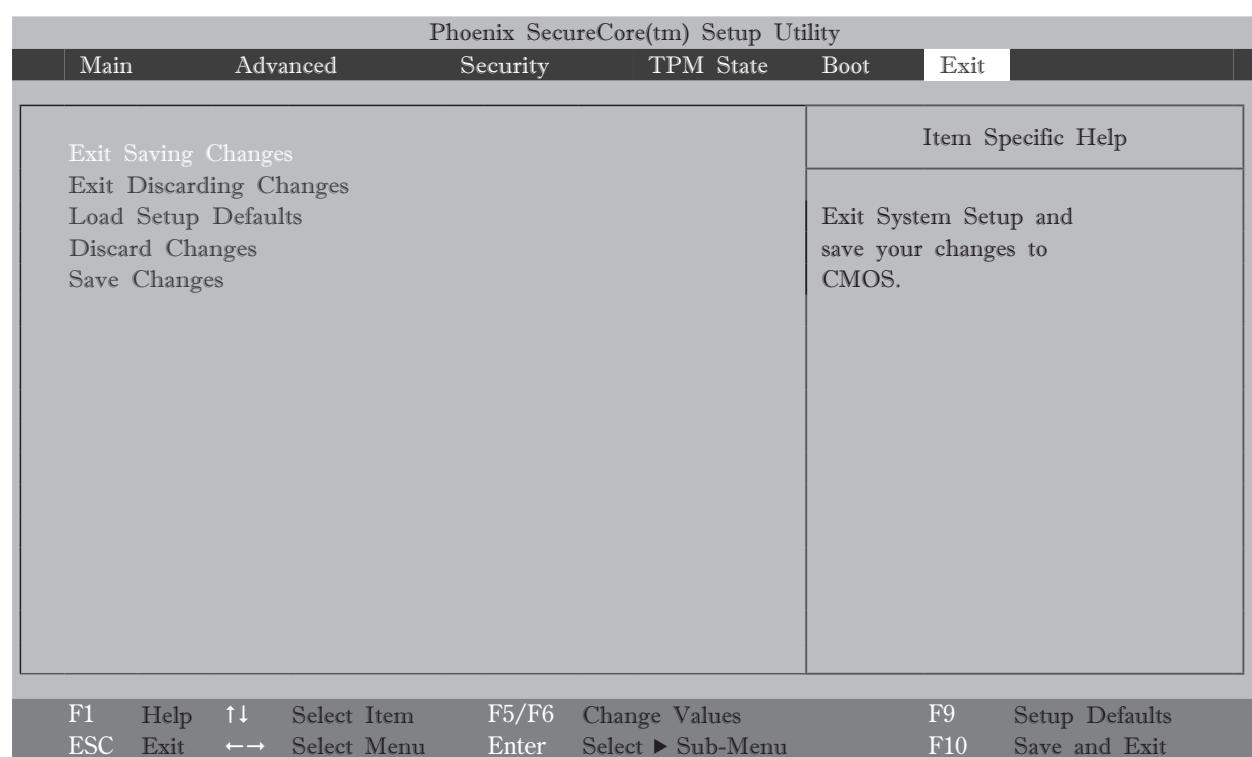
- Load default values for all SETUP items.

Discard Changes

- Load previous values from CMOS for all SETUP items.

Save Changes

- Save Setup Data to CMOS.



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BIOS Vendor

BIOS Vendor : **Phoenix**

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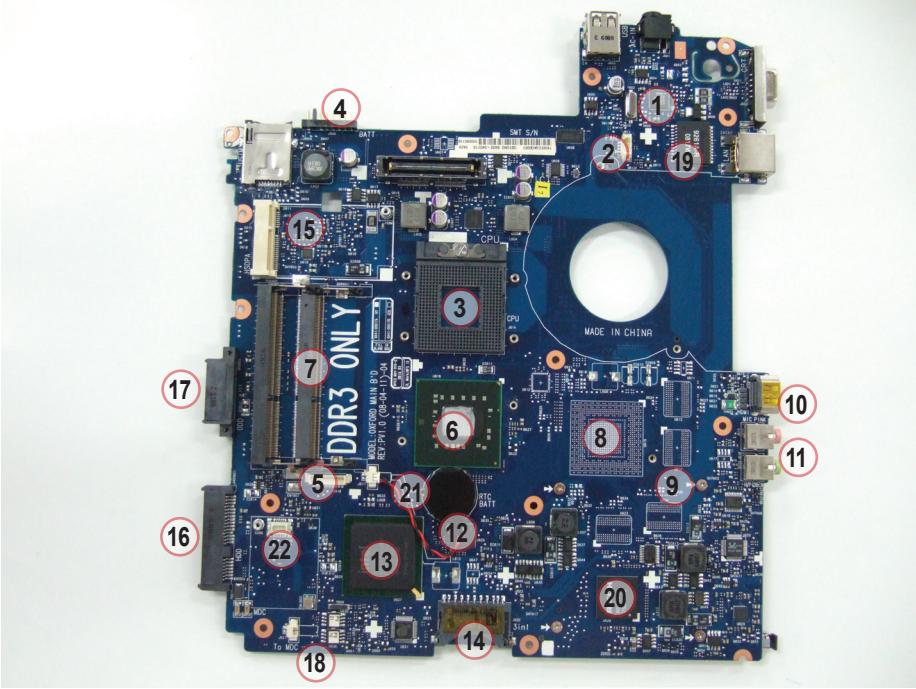
2-9. Mainboard Part Description

TOP			
1	CRT Connector (J604)	9	MDC Cable Connector (J14 , Option)
2	2-stack USB Connector (J603)	10	KBD Connector (J9)
3	DC-Jack (J601)	11	Bluetooth Connector (J5)
4	MICOM (U15)	12	Touchpad button (SW2, SW3)
5	Minicard Connector (WLAN, J11)	13	Touchpad FFC Connector (J8)
6	LCD Connector (J1)	14	PCMCIA Frame (J13)
7	Camera Connector (J3)	15	MIC Connector (J7)
8	Power switch (SW1)	16	Speaker Connector (J4)

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Bottom			
			
1	LAN Controller (U604)	12	Clock generator (U623)
2	FAN Connector (J611)	13	ICH9M (U626)
3	CPU socket (J614)	14	3-in-1 Connector (J620)
4	Battery Connector (J608)	15	Minicard Connector (Robson, J613)
5	Debug Connector (J618)	16	SATA HDD Connector (JHDD601)
6	MCH (U615)	17	SATA ODD Connector (ODD601)
7	DDR3 Connector (DDR601, 602)	18	SPI ROM (U629)
8	GFX Controller (U614)	19	LAN Transformer (LT601)
9	GDDR3 Memory (U612, U613, U619, J622)	20	Multicard Controller (U627)
10	HDMI Connector (JHDMI601)	21	RTC Battery
11	Headphone, MIC jack (J615, J616)	22	MDC card